Volume-5, Issue-1, January -2016 • ISSN No 2277 - 8160

Research Paper | Medical Science

Clinicopathological Profile and Incidence of Ovarian Tumors – A Ten Year Study

Dr. VIJAYTA MODI	Senior Demostrator, Pathology, Department of Pathology, Mahatma Gandhi Medical College and Hospital, Jaipur, Rajasthan
Dr. MAHESH PAL KHATRI	Assistant Prof. Department Of Medicine, S.P.Medical College, Bikaner, Rajasthan.
Dr. NARAYANI JOSHI	Sr. Prof. Pathology, Department of Pathology, Mahatma Gandhi Medical College and Hospital, Jaipur, Rajasthan

ABSTRACT

Aims: To find out relative incidence of histological subtypes, age study and clinical presentation of ovarian tumours.

Settings and Design: Cross- sectional study.

Methods and Material: The study consisted of 235 specimens of ovarian tumors, received fixed in 10% formalin. H&E stained slides were examined to determine the histological type by WHO classification.

Statistical analysis used: Frequency & Chi- square.

Results: 235 cases of ovarian neoplasms were studied. Among 235 cases, 82.98% benign, 1.28% borderline and 15.74% malignant ovarian neoplasms were found.

Most common incidence was of surface epithelial neoplasms (73.6%) and then was germ cell neoplasms (18.7%). Sex cord-stromal tumours accounted for 5.1% of all cases and granulosa cell tumours constituted 2.5% of all. Benign cystic teratomas were most common germ cell neoplasms. Highest incidence of all neoplasms was from 21-50 years of age. Most of the patient with ovarian neoplasm was asymptomatic. Most common mode of presentation was with pain abdomen (62.7%), swelling abdomen (49.5%) and menstrual disturbance (36.8%). Gross characteristics of ovarian neoplasms were not very specific. Microscopically, all neoplasms fulfilled criteria as observed by other authors. Majority of cases i.e. 93% are unilateral, 7% cases are bilateral.

Conclusions: Surface epithelial tumours form the most common group of ovarian neoplasms with serous variety encountered most commonly. Borderline tumours show features intermediate between clearly benign and malignant tumours. Ovarian neoplasms are seen most commonly in 21 to 50 years of age. Most common mode of presentation with ovarian tumours is pain abdomen and swelling abdomen. WHO classification is simply, easy to understood and easily applied.

KEYWORDS : Ovarian tumors, Histopathology, Clinical features

Introduction:

The ovaries are though small organs are frequent sites for tumours. Ovarian cancer is the most common cause of death among women with gynecologic cancer and the fifth leading cause of cancer death in all women[1]. Peritoneal covering or coelomic epithelium of ovary undergoes metaplastic transformation frequently and such metaplasia may account for origin of various neoplasms that are different from normal ovarian histology[2].

Ovarian cancer is peculiar in that it does not give any specific signs & symptoms particularly in early stage cancer, about two-third of these have already become far advance and prognosis in such cases is unfavourable[3].

Ovarian tumours are insidious in onset. They cause signs and symptoms like fullness of abdomen, mass per abdomen, pain abdomen, pressure symptoms and irregular menstrual bleeding. Apart from primary tumours, ovaries are frequent site for metastatic involvement from organs like stomach, colon and breast.

Present study is undertaken to evaluate ovarian tumours among the Pathology Department in Mahatma Gandhi Medical College and hospital, Jaipur, and assess their incidence, clinical profile and study of the various histological types.

Subjects and Methods:

- To find out the relative incidence of histological subtypes of ovarian neoplasms.
- To study age related occurrence of these neoplasms.
- To find out frequency of benign and malignant neoplasms of ovary.
- To study clinical presentation of the various ovarian neoplasms.
- To study histologicals features of ovarian neoplasms both benign & malignant.
- To characterize the ovarian tumours based on gross and histopathological type.
- To classify ovarian neoplasms according to WHO Classification.

Present study includes both retrospective and prospective study over a period of 10 years, which includes 120 months (July. 2002 to June. 2012) of prospective and retrospective study. 235 cases of ovarian tumours – benign and malignant were included in the study.

For the retrospective study, tumours of ovary registered in the histopathological registers in Department of Pathology were taken. For prospective study, specimens of ovary received from Mahatma Gandhi Hospital, Jaipur over a study period were taken up.

Following information was obtained from every patient:-

1. Name
2. Age
3. C R number
4. Relevant symptoms eg pain abdomen, abdominal swelling, menstrual disturbances, history of bleeding P/V etc.
5. Family history
6. Past and present menstrual history
7. Marital status
8. Obstetric history
9. Per abdominal and per vaginal findings
10. Laterality
11. Gross examination of specimen
12. Microscopic findings.

Clinical details like age, obstetric history, presenting sign and symptoms, menstrual history, virilizing or feminizing effects and other constitutional symptoms were noted and the observation were entered in the proforma.

On receiving the specimen, gross features like size, shape, colour, external appearance, consistency, appearance on cut section and contents were noted.

The tumours were cut at various levels depending on the individual cases and they were allowed to fix in 10% formalin for 24-48 hours.

After fixation, multiple bits were taken from representative areas of the tumour and the accompanying tissues. Special attention were given to solid areas, areas adjacent to the ovarian surface and papillary projections.

They were processed for histopathological examination and paraffin blocks were made. The blocks were cut at 3-5µ thickness and stain with Haematoxylin and Eosin.

Special stains like 'Periodic Acid Schiff's stain, Gomori's Reticulin stain, and Meyer's Mucicarmine stain and others were done on selected cases and wherever required to aid the diagnosis.

Detailed microscopic examination of the tumour was done to arrive at a histopathological diagnosis. The lesions were classified as per the WHO classification of ovarian tumours.

The data compiled were analyz for various parameter like age, parity, clinical signs, symptoms, size of tumour, bilaterality, gross features of the tumours and the incidence of the different histological types. Data was analyzed by percentage and Chi-square test

Results:

Present study includes both retrospective and prospective study over a period of 10 years, which includes 120 months (July. 2002 to June. 2012) in MGMCH, Sitapura, Jaipur. 220 cases of ovarian tumours – benign and malignant were included in the study. Fifteen patients had bilateral ovarian neoplasms, so total numbers of neoplasm studied were 235. Out of these neoplasms maximum incidence were benign neoplasms 83%, 16% were malignant and 1%were borderline. Out of 195 benign ovarian neoplasms maximum were Simple serous cyst/ Serous cystadenoma 123 (63.07%). Only Three cases of borderline tumours were found, two mucinous and one serous borderline tumour. Out of 37 malignant ovarian neoplasm maximum 17 (46%) were papillary serous cystadenocarcinoma while one case each of Endometrioid adenocarcinoma, Dysgerminoma, Round cell neoplasm.

Table No. 1 Incidence of Ovarian neoplasms in various Histological types

S. No.	Types of neoplasms	Total neoplasms	Percentage
1	Surface Epithelial neoplasms	173	73.6
2	Germ Cell tumours	44	18.7
3	Sex cord tumours	12	5.1
4	Metastatic tumours	5	2.1
5	Round cell tumours	1	0.4
6	Total	235	100

Table No. 2. Distribution of various Surface Epithelial Neoplasms

Type of Neoplasms	Benign		Borderline		Malignant		Total (n=173)	
	No.	%	No.	%	No.	%	No.	%
Serous	133	76.9	01	0.6	18	10.40	152	87.9
Mucinous	15	8.7	02	1.2	03	1.7	20	11.6
Endometrioid	-	-	-	-	01	0.6	01	0.6
Total	148	85.5	03	1.7	22	12.7	173	100

Chi-square=16.260 , df=4 , P=0.003 (HS)

Table No. 3. Distribution of various Sex cord-stromal tumours (n=12)

Type of neoplasms	Granulosa cell tumour	Thecoma-Fibroma group	Total
No. of neoplasms	06	06	12
Percentage	50	50	100

Table No. 4. Distribution of various Germ cell neoplasms (n=44)

Type of neoplasms	Dermoid cyst	Dysgerminoma	Yolk sac tumour	Total
No. of neoplasms	41	01	02	44
Percentage	93.2	2.3	4.5	100

Table No.5. Age distribution in various ovarian neoplasms (n=235)

Age (years)	Benign	Borderline	Malignant	Total	%
11-20	11	-	03	14	6.0
21-30	52	-	03	55	23.4
31-40	68	-	05	73	31.0
41-50	50	02	12	64	27.2
51-60	07	01	10	18	7.7
>60	07	-	04	11	4.7

Table No.6
Distribution of number of neoplasms and their percentage based on maximum tumour diameter (n=235)

Size (cm)	Benign	Borderline	Malignant	Total No. of neoplasm	Percentage
<5	54	0	11	65	27.7
5-15	124	0	23	147	62.6
>15	17	03	03	23	9.8
Total	195	03	37	235	100

Chi-square=1.536 , df=2 , P=0.464 (NS)

Table No.7
Consistency of tumour in benign, borderline and malignant ovarian neoplasms (n=235)

Type of tumour	Cystic	Mixed	Solid	Total
Benign	170	21	04	195
Borderline	03	-	-	03
Malignant	08	15	14	37
Total	181	36	18	235

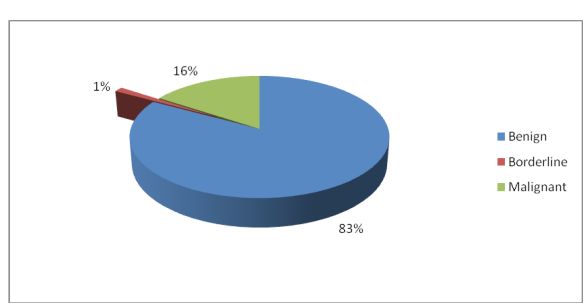

Figure 1: Incidence of various ovarian neoplasms studied

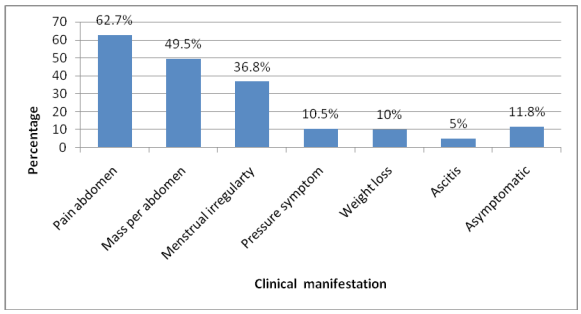

Figure 2: Clinical manifestation in patient with ovarian neoplasms

Discussion:

In our study the incidence of benign neoplasm is 82.98%, of borderline 1.28% and of malignant neoplasm is 15.74%. While according to Gupta et al(2007)[4], the incidence of benign neoplasm was 72.9%, of borderline 4.1% and of malignant neoplasm was 22.9%. According to Sapana et al (2008)[5], the incidence of benign neoplasm was 74.5%, of borderline 2.9% and of malignant neoplasm was 22.5%. According to G.G.Swamy (2010)[6], the incidence of benign neoplasm was 71.6%, of borderline 3.3% and of malignant neoplasm was 25.1%.

In our study maximum 173 cases were of surface epithelial neoplasms (73.6%) and next frequent was germ cell tumours 44cases (18.7%) and the next frequent are Sex cord stromal tumour (2.13%), Metastatic (2.13%), Round cell tumour (0.47%). Our results are supported by Gupta et al (2007)[4] and Mondal et al (2011)[7].

In our study one case (0.47%) is, of round cell tumour (NHL), similar type of incidence was found by Mondal et al (2011)[7], a case report by Elharroude T et al (2008)[8], also support our incidence of round cell tumour.

In the present study, among the benign epithelial tumours studied, serous tumour was more common. The serous tumour was the commonest tumours encountered in the study accounting for cases (64.68%) which is higher percentage than 49% reported by Nalini Gupta et al (2007)[4].

In the present study, considering, 123 cases of simple serous cystedenoma / simple serous cyst, 7 cases of papillary serous cystadenoma and 2 cases of serous cystadenofibroma and 1 cases of papillary serous cystadenofibroma were found as benign serous tumours. 87.9% of the serous tumours were benign, these findings is comparable to 89.4% observed by Nalini Gupta et al (2007)[4].

In the present study, among the malignant epithelial tumours studied, serous tumours were more common than other malignant tumours. Among the malignant tumours serous cystadenocarcinoma (48.65%) were most common. This findings is comparable to 46.2% observed by R Jha et al (2008)[9]. Mucinous cyst adenocarcinoma was found in 13.6% of cases out of malignant surface epithelial tumours. Mucinous cystadenocarcinoma has been reported as the next common epithelial malignancy following serous cystadenocarcinoma. Similar results were reported by Mondal et al (2011)[7].

In the present study, 3 cases of epithelial neoplasms were of borderline type. Out of borderline epithelial neoplasms, 2 were mucinous in nature while one was serous in nature. These findings were compatible with findings of Nalini gupta et al (2007)[4].

In the present study germ cell tumours (44 cases) accounted for 18.7% of total ovarian neoplasms which is comparable with Pilli et al (2002)[10] and G G swami et al (2010)[6].

In the present study sex cord stromal tumour 12 cases (5.1%) were encountered which is comparable with Uzma et al (2010)[11] and Mondal et al (2011)[7].

As far as age was concerned highest incidence of all ovarian neoplasms were from 21 to 50 years age, of these, maximum number of benign cases (68 cases) were in 31 to 40 years of age group and malignant (12 cases) in 41 to 50 years. Youngest patient was 12 years old and oldest 72 years. These results are are compatible with Pilli Mondal et al (2011)[7].

Most of the ovarian neoplasm in this study were seen in multipara, Only 17% were seen in nullipara. These finding are compatible with Mondal et al (2011)[7].

In our study serous tumour have more chances of bilaterlity than mucinous. These findings are compatible with Mondal et al (2011)[7].

In the present study, most common mode of presentation was Pain abdomen, shown by 62.7% cases, Mass per abdomen was seen in 49.5% and Menstrual irregularity in 36.8% cases. Pressure symptom was shown by 10.5% cases and Weight loss by 10% cases. Ascitis was shown by 5% of cases and 11.8% cases were asymptomatic. These findings are compatible with findings shown by Ambareen khan et al (2010)[12] and Uzma et al(2010)[11].

In the present study the largest tumour (mucinous cystadenoma) measured 24X20X14cm in size and the smallest tumour (simple serous cyst) was 2X1.8X1cm in size. In our study 62.6% of all ovarian neoplasms were medium sized, 27.7% were small sized and 9.8% were large sized. Majority of malignant tumours (62.2%) and benign tumours (63.6%) were medium size (5 to 15cms). Similar result were found by Samina et al.(2010)[13].

181 cases (77%) were cystic in nature and 36 cases(15.3%) were partly cystic & partly solid and 18cases (7.7%) were purely solid. Of the cystic tumours, 93.9% were benign 4.4% were malignant. In our study all borderline tumours were cystic in consistency. Of the solid tumours 77.8% were malignant. Sapana et al (2009)[5] also made same observation.

Histologically, ovarian neoplasms were grouped as per W.H.O. classification and tumours fulfilled criteria described for various ovarian neoplasms.

REFERENCES

1. http://www.uptodate.com/contents/epithelial-ovarian-cancer-risk-factors-clinical-manifestations-and-diagnostic-evaluation 2. D Russell P. Common epithelial tumours of the ovary – A new look. Pathology 1985;17: 555-557. 3. Howkins & Bourne, Shaw's text book of gynaecology 13th edi. 2006,:355 4. Nalini Gupta, Dipti Bisht, Anil Kumar Agarwal, Veena K. Sharma. Retrospective and prospective study of ovarian tumours and tumour like lesions. Indian J Pathol Microbiol 2007; 50(3): 525-527 5. Sapana Amatya, Geeta Gurung, Ashma Rana, Annual clinicopathological analysis of ovarian tumours. NJOG 2009 jan-feb;4(2):18-24. 6. Swamy GG, Satyanarayana N. Clinicopathological analysis of ovarian tumours- a study on five years samples.: Nepal Medical Coll J. 2010 Dec; 12(4):221-3. 7. Mondal SK, Banyopadhyay R, Nag DR et al. Histologic pattern, bilaterality and clinical evaluation of 957 ovarian neoplasms: A 10-year study in a tertiary hospital of eastern India J Can Res Ther 2011;7:433-7. 8. Elharroude T, Ismculi, Errihans H and Jalil A. Primary lymphoma of ovary – a case report: J cancer Res Ther- October - December 2008; 4 (4): 195-196 9. R Jha and S Karki. Histological pattern of ovarian tumours and their age distribution. Nepal Med Coll J 2008; 10(2): 81-85. 10. Pilli GS, Suneeta KP, Dhaded AV, Yenni VV. Ovarian tumours:a study of 282 cases. J Indian Med Assoc 2002 Jul;100(7):,423-24,. 11. Uzma Nabi, Nadia Naseem, Sabiha Riaz, Imrana Tanvir. Clinicopathological Pattern in 150 Females Presenting with Benign and Malignant Ovarian Tumours. JPMA 2011; 742-46. 12. Ambareen Khan, Khusro Sultana, Presenting signs and symptoms of ovarian cancer at a tertiary care hospital, J Pak Med Assoc. vol. 60, no.4,April 2010:260-262. 13. Samina Zaman ,Sarosh Majid. A retrospective study of ovarian tumours and tumours-like lesions.J ayub Med Coll Abbottabad 2010;22(1):104-108.